

PERSONALITY DIFFERENCES BETWEEN INDIVIDUALS VARYING IN LUCID DREAMING FREQUENCY

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Abstract. *Personality characteristics associated with individuals who differ in the frequency with which they report experiencing dream lucidity, awareness of dreaming as a dream while in the dream state, is the focus of this study. Male and female adults and college students are compared in terms of several personality and personal characteristic variables. Psychological and physiological well-being is associated with high lucid dreaming frequency among women but not so for men. Among the latter, religious seeking seemed to personify the lucid dreamer.*

In a lucid dream "the dreamer wakes from an ordinary dream in that he feels he is suddenly in possession of his normal waking consciousness and knows that he is actually lying in bed asleep; but the dream world he is in remains perfectly real" (Tart, 1979, p. 192). This type of dream has a rich historical heritage (Belicki & Hunt, 1978) and in recent years has been receiving long overdue scientific consideration (Gackenbach, 1978; Hearne, 1978; LaBerge, 1980).

Some have pointed to the lucid dream as useful in increasing psychological functioning (Malamud, 1980). Halliday (1982) has found it helpful with chronic nightmare sufferers in attaining some measure of dream control. Related to the potential significance of dream lucidity as a psychotherapy tool is the question regarding the personal characteristics of individuals who spontaneously experience these dreams. Only two studies thus far have examined possible personality differences between individuals who vary in the frequency with which they report experiencing dream lucidity (Belicki & Hunt, 1978; Hearne, 1978). In both cases frequent lucid dreamers were compared to nonlucid dreamers on a

variety of personality measures. Belicki and Hunt (1978) examined college students in terms of their cognitive complexity, experiences with non-drug altered states of consciousness and self-concepts, while Hearne (1978) examined students on the Eysenck Personality Inventory, scored for extroversion and neuroticism, and the Raven Progressive Matrices, as a measure of intelligence. Both studies reported no personal characteristic differences between students who said they had never had a lucid dream and those who said they frequently experience such dreams. However, in recently reported unpublished data Dane (Personnel Communication) found that lucid dreamers were higher risk takers than nonlucid dreamers.

Possible personality and personal characteristic differences between individuals who report differing frequencies of dreaming lucidly will be further examined in this study. A general personality inventory (Sixteen Personality Factor Questionnaire, 16PF; Cattell, 1972) was chosen as the primary assessment vehicle. Specifically, it is hypothesized that low Q_2 (self-sufficiency) and Q_4 (ergic-tension) and high C (ego strength) and A (sociable) scores are more likely to be associated with dream lucidity. No relationship is expected between Q_1 (extroversion) and B (intelligence) and lucidity.

Factor A (sociable) represents an old pattern based originally on schizophrenic psychopathology but adapted by Cattell (1973) to the normal range. Ego strength (Factor C) is associated with emotional stability or the ability to face reality. The hypotheses regarding Factors A and C are based upon the premise that lucid dreaming is a thought-like, that is rational and realistic, as opposed to a dream-like mentation (Gackenbach, 1978). Thought-like sleep mentation has been shown to be associated with low schizophrenia (high score on Factor A) and high ego strength (high score on Factor C) (Reed, 1978).

Also, Schacter (1976) found that anxious people are more likely to have thought-like, hypnogogic imagery. If lucid dreams are an hypnogogic/hypnopomic artifact as has been commonly held (Dement, 1975) and thought-

like, then lucid dreamers ought to be high in anxiety. However, if lucidity represents a state helpful in effective psychological processing (Malamud, 1980), then low anxiety would be expected to be associated with frequently experiencing these dreams.

Group dependence (Factor Q_2) has been associated with hypnotizability (McCord, 1965), which in turn is associated with dream control (Evans, 1977), a characteristic commonly reported in lucid dreams. (Gackenback, 1978). Consequently, low scores (groups dependence) on Factor Q_2 are expected to be associated with dream lucidity. A state of relaxation, or low Factor Q_4 score, is hypothesized to relate to dream lucidity based on Reed's (1977) finding of a positive relationship between the practice of meditation (a relaxed state) and dream lucidity.

The second order factor of extraversion (Factor Q_1) and the intelligence factor (B) have previously been found to be unrelated to lucidity (Tart, 1979), so no relationship between these subscales and lucidity would be expected in the present study.

EXPERIMENT 1

Data on these personality scales as well as several other personal characteristic measures was collected in a series of three research studies. The first is described in detail elsewhere (Reed, 1978). Briefly, members of the Association for Research and Enlightenment (A.R.E.), a non-profit organization interested in exploring and making practical use of the information which came through almost 15,000 telepathic-clairvoyant readings of the late Edgar Cayce, were asked to fill out the "A.R.E. Research Questionnaire Workbook" and to participate in a dream research project. Subjects were sent the materials for the dream research project which included several personality scales as well as instruction for the 28-day dream recording project. Information on lucid dreams was gathered during the course of this project.

In the first experiment of the present investigation pretest scores from the Self Analysis Form (i.e., measures

covert and overt anxiety; see Cattell, 1957) and the Mooney Problem Checklist (i.e., nine subscales measuring health, economic, self improvement, personality, home and family, courtship, sex, religious and occupational problems among adults, in Mooney & Gordon, 1950) and some items from the A.R.E. Research Questionnaire Workbook were utilized.

Method

Subjects. Subjects were drawn from the membership of the A.R.E., who filled out the Research Questionnaire Workbook and participated in the dream research project for a period of 28 days showing neither logical inconsistencies in the ratings nor departure from the standard recording procedure. Ninety-nine of the 181 A.R.E. members which met these standards agreed to participate in the present study. Of these 68 women and 22 men (mean age = 45 years) returned completed packets. Over half were married with children and the majority had some education beyond the high school level.

Instruments. SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE (16PF; Cattell, 1972). This 105-item test was devised to give an extensive survey of personality in a brief time and rests upon sixteen functionally independent, factor analytically derived subscales: sociable (A); intelligence (B); ego strength (C); dominance (E); surgency (F); superego strength (G); adventurousness (H); sensitive (I); paranoid suspiciousness (L); unconcerned (M); shrewdness (N); guilt proneness (L); radical (Q_1); self-sufficiency (Q_2); self-sentiment control (Q_3); and ergic-tension (Q_4). Four second order factor scores were also to be calculated from the 16 subscale scores of the 16PF. They are: introversion-extroversion (Q_I); low anxiety-high anxiety (Q_{II}); tenderminded emotionality-tough poise (Q_{III}); subduedness-independence (Q_{IV}). As per Cattell (7) a neuroticism score was also compiled.

GROUP EMBEDDED FIGURES TEST (GEFT; Witkin, Oltman, Raskin & Karp, 1971). This 18-item test,

which is an adaptation of the Embedded Figures Test, was designed to measure the "extent of competence at perceptual disembedding" (p. 3). Successful identification of simple figures embedded in complex figures signifies greater differentiation in perceptual functioning or field independence.¹

LUCID DREAMING QUESTIONNAIRE (LDQ; Gackenbach, 1978). This instrument tapped the perceptual texture, emotional content, and cognitive aspects of lucid dreams. Self-reported lucid dreaming frequency was taken from this questionnaire.²

PROCEDURE

A letter of inquiry was mailed to potential subjects requesting their participation in an A.R.E.-sponsored research project on lucid dreaming. Respondents were sent the LDQ, GEFT and 16PF by return mail. Twenty-one subjects who did not return the packet of materials within three weeks were sent a reminder nine weeks after the letters of inquiry were mailed but prior to the cutoff date for data collection.

RESULTS

Individuals were classified as frequently experiencing lucid dreams (i.e., one or more a month to one or more a week), infrequently experiencing lucid dreams (i.e., once in their lifetime to two to six per year), and having never experienced a lucid dream, based on their self-report from the LDQ. Regarding general descriptive variables such as demographic data, personal habits and interests and organized activities, group

¹ A detailed discussion of the relationship between psychological differentiation and dream lucidity is available elsewhere (Gackenbach, 1978).

² The correlation between self-reported lucid dreaming frequency and the number of lucid dreams reported during the month-long A.R.E. was significant ($r = .42$).

differences were ascertained using chi-square analyses. This information was obtained from the A.R.E. Research Questionnaire Workbook. Demographic variables included: number of parents and siblings alive, sex of subject, birth month, education, and marital status. There was a higher incidence of mother deaths among lucid dreamers (both frequent and infrequent) than among non-lucid dreamers ($\chi^2[2] = 6.07, p < .05$). This is not accounted for by subject age as a one-way analysis of variance on age of subject across lucidity groups did not reach significance ($F[2,77] = 0.267, n.s.$).

Chi-square analyses across groups on the following personal habit variables were also performed: use of some dietary plan, frequency of exercise, use of alcoholic beverages in past month, smoking habits, drug use, coffee or tea drinking habits, use of vitamin supplements, meditation history, whether currently meditating, length of time have been meditating, and number of minutes per meditation. Only the question regarding whether or not participants were currently meditating was differentially distributed across the three lucidity groups with frequent lucid dreamers being less likely to be currently meditating than the other two groups ($\chi^2[2] = 8.18, p < .02$).

Attitudes toward and involvement with the following organized activities were also investigated by means of chi-square analyses: A.R.E. study groups; Silva Mind Control; theosophy; Charismatic Renewal; encounter groups; growth centers, eastern teachers or gurus; psychotherapy; Sufism; Transcendental Meditation; Yoga; Zen Buddhism; Christian Science; church; communal living; and eastern religion. It was found that Yoga, in terms of both attitude and involvement, appears to have less attraction for the frequent lucid dreamer than for the other two groups. That is, frequent lucid dreamers were more likely to have a neutral rather than a positive attitude toward Yoga ($\chi^2[2] = 8.13, p < .02$), and were less likely to be involved in Yoga ($\chi^2[2] = 7.24, p < .03$) than members of the other two groups. In addition, nonlucid dreamers were more likely to be involved with the followers of

eastern gurus ($\chi^2[2] = 6.37, p < .04$). Although frequent lucid dreamers may not be interested in Yoga, they were more likely to be involved in Silva Mind Control than infrequent or nonlucid subjects ($\chi^2[2] = 11.04, p < .004$).

Because information on 35 personality variables was obtained from these subjects (i.e., GEFT; 16 primary factors, four secondary factors and neuroticism from 16PF; overt, covert, and total anxiety scores from the Self Analysis Form; and nine subscale scores and sum score from the Mooney Problem Checklist), the data reduction method of factor analysis was employed prior to the investigation of group differences on personality variables. Ten factors emerged so that this set of A.R.E. members can be described along 10 personality dimensions: "Self-Concept," "Problems," "Independent Thinker," "Masculinity," "Hypochondria," "Joining," "Attractiveness," "Sociable," "Intelligence-Independence," and "Bohemian."

Factor scores were derived for each of the aforementioned 10 factors and 10 one-way analyses of variance were carried out with lucidity groups as the independent variable and each personality factor score as a separate dependent variable. A significant difference between groups was found only for Factor 1, "Self-Concept" ($F[2,86] = 3.687, p < .03$). Five variables loaded in a bipolar fashion above criterion on this factor.

At the negative pole were Ego Strength, Factor C from the 16PF, while the positive pole was defined by 16PF scale "O", or Guilt Proneness; "Q₄", or Ergic Tension; "Q_{II}", or Anxiety; and Neuroticism. In other words, those with high scores on this factor would be low in Ego Strength, high in Guilt Proneness, high in Ergic Tension, high in Anxiety, and high in Neuroticism, while those who scored low on this factor would display the opposite pattern. This dimension appears to be related to feelings of self-esteem and was therefore entitled "Self-Concept," with low scorers exhibiting more self-acceptance than high scorers. A posteriori paired comparisons were made using the Duncan procedure. Frequent lucid dreamers were found to have more positive self-concepts than infrequent lucid dreamers (q

= 2.96, $p < .05$). Nonlucid dreamers did not differ in self-concept from either of the dream groups.

DISCUSSION

The self-concept difference between frequent and infrequent lucid dreamers is provocative if one considers the philosophical background and psychotherapeutic implications of these dreams. That is, some philosophical or religious systems consider dream lucidity as an integral step toward spiritual enlightenment (Chang, 1977). Additionally, Corriere and Hart (1977) have noted that reality-based lucid dreaming is positively related to integrated psychological functioning. Of course the lack of a self-concept difference between the two lucid dreaming groups and the non-lucid dreamers is puzzling.

Relatedly, subjects who had never or infrequently experienced lucid dreams held more positive attitudes toward and were more involved with an eastern philosophy that supports the lucid dream as a part of the path to enlightenment (Chang, 1977) than those who reported frequently experiencing dream lucidity. Not only did frequent lucid dreamers display less interest in Yoga, they were also less likely to have been currently meditating, a practice often associated with eastern philosophical perspectives, when they filled out the A.R.E. Workbook Questionnaire.

The trait portrait that results is that the frequent lucid dreamer is an individual of high self-concept who is not as interested in the eastern philosophies as his or her dream counterparts. The next study sheds more light on personality characteristics associated with those who experience lucid dreams.

EXPERIMENT 2

Method

Subjects. Three-hundred and fifty-six undergraduates enrolled at a small northeastern college

participated in the present study for course credit (males = 138, females = 218).

Instruments. SLEEP HABITS QUESTIONNAIRE (SHQ; MONROE, 1967). A question added to this 13-item scale asked subjects how frequently they experience dream lucidity.

LUCID DREAMING. A detailed explanation of the concept of dream lucidity was administered after the SHQ because it was believed that the definition of lucidity on the SHQ was inadequate.

SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE. (16PF; CATTELL, 1972). This was the same questionnaire described in Study 1. The 16PF was again scored for the 16 primary factors, four secondary factors and neuroticism.

PROCEDURE

The questionnaires were administered on separate occasions to mixed sex groups ranging in size from 50 to 150 with the SHQ always administered before the 16PF. After the SHQ was administered it came to the attention of the researcher through informal contacts with student subjects that there might have been some confusion between lucid dreaming and dream recall ability. Consequently a separate, detailed explanation of dream lucidity was drawn up and administered to the same individual either in class or by telephone.

RESULTS AND DISCUSSION

Seventy-two subjects were lost because it could not be verified whether they understood what a lucid dream is or because there was no information on them regarding their lucid dreaming experiences. One hundred and twenty-six of the remaining 284 subjects filled out both the lucid verification sheet (or were telephoned) and the 16PF.

Consistent with Hearne's (1978) finding, females in this student sample were found to be more likely to report experiencing dream lucidity than males ($t[282] =$

1.87, $p < .05$). However, this sex difference was not found in the adult population for either of the two indices of lucid dreaming frequency (dream tally sheets from the A.R.E. dream research project or self-reported frequency from the LDQ). Perhaps this was because those individuals who self-selected to participate in this study had previously demonstrated a high interest in their dreams with their participation in the A.R.E. Dream Research Project. Because of the sex difference in lucid dream frequency in the student population and in order to directly compare the relationship between dream lucidity and personality traits between the student and adult populations, separate correlations for each of the sexes within each sample were calculated between lucid dreaming frequency and the various individual difference variables. For the adult population, male and female correlations were calculated between the personal characteristics and personality variables discussed in the A.R.E. project and Experiment 1, lucid dreaming frequency as defined by self-report (LDQ) and number of lucid dreams recorded during the month long A.R.E. dream project. For the students, correlations were calculated separately for each sex between their self-reported lucid dreaming frequency and the various subscales of the 16PF. Correlation coefficients are portrayed in Table 1.

A remarkably different pattern of traits and personal habits occurred as a function of sex. A clear pattern emerges for the adult female lucid dreamer. She does not perceive herself as having economic, religious, or occupational problems and is practical-minded, forthright, in touch with her emotions, and nonanxious. She is willing to experiment. This woman takes good care of herself by not drinking, adhering to a dietary plan, and exercising. Finally, and most interestingly, she is an older woman.

The adult male lucid dreamer can be seen in this trait and personal habit portrait as a more perplexing individual. He seems to be a seeker (religious problems) who is experiencing some difficulty (smoking, no exercise, lower intelligence and group dependent) yet is

emotionally in control (low anxiety, emotionally stable, conscientious, controlled, and meditating currently).

Among the young women the trait pattern is clearly consistent, though not identical, to their elders. That is, frequent lucid dreaming experiences are associated with women who are practical, relaxed, and calm, certainly a reasonable younger version of the practical and healthy older woman.

One could also argue that the trait portrait of the college males is consistent with their adult counterparts. That is, lucid dreaming is associated with lower intelligence and conscientiousness. Relatedly, male college students who dream lucidly are suspicious and anxious, yet they also represent themselves as assertive, happy-go-lucky, and extraverted. One can conceptually see a similar pattern between these young male lucid dreamers and their adult counterparts in that both are men having some problems yet possessing characteristics that may enable them to cope well with those problems. What is most striking, however, is the remarkable sex difference in the type of individual most likely to report having lucid dreams.

CONCLUSIONS

Personality characteristics associated with awareness of dreaming as a dream while in the dream state, or dream lucidity, were pursued in the present research program. The major personality assessment vehicle, the Sixteen Personality Factor Questionnaire (Cattell, 1972) was administered to two different populations. They were 90 adult members of the Association for Research and Enlightenment and 126 college students from a small northeastern school. Additional personal characteristic information was available and analyzed on the adult sample from a previous A.R.E.-sponsored research project in which they had participated.

It had been expected that lucid dreaming would be associated with group dependence (Q_2), tranquility (Q_4), emotional stability (C), and warmheartedness (A),

while no relationship was expected between dream lucidity and intelligence (B) or extroversion (Q_1). Hypotheses regarding both high and low scores on anxiety (Q_{II}) were offered.

The notion that lucidity might be a more thought-like than dream-like sleep mentation was weakly supported based on its association to personality traits. As per Foulkes (1967), who noted a relationship between thought-like mentation and ego strength, ego strength (high score on Factor C) was associated with lucidity among adults, especially males, but no association between these constructs was found for the college sample. Contrary to the expectation that lucidity is thought-like, reservation (low Factor A) rather than warmheartedness (high score on Factor A) was associated with lucidity for adult females but unrelated in both male samples or college females. The hypothesis that lucidity is thought-like as versus dream-like and, therefore, emerges from NREM sleep is not well supported in this personality data. Additionally, sleep lab studies have demonstrated that lucid dreams emerge, in the main, from unequivocal REM sleep (Hearne, 1978; LaBerge, 1980).

Related to the above hypothesis and to the notion that lucidity might be an artifact of the arousal process (hypnopompic state) was the hypothesized relationship between high anxiety and lucidity. If lucidity was found to be associated with low anxiety, it was thought that this would support the notion that these dreams are psychotherapeutically helpful. Among the student males high anxiety was associated with lucidity. This suggests that, for young males at least, lucidity might be an artifact of arousal. LaBerge (1980) speaks of such types of lucid dreamers by saying that, "while lucid dreaming does not occur during periods of wakefulness within REM, lucidity is initiated from such 'micro-awakenings', the lucid dreams themselves taking place during unambiguous REM sleep" (p. 90). Perhaps the reason that the college male and female trait portraits are so dissimilar is because they are experiencing different types

of lucid dreams, waking initiated versus sleeping initiated.

Because of the relationship between group dependence (low score on Factor C), hypnotizability, and dream control (McCord, 1965; Evans, 1977), it was expected that frequent lucid dreams would be group dependent because of the amount of control often reported in such experiences (Gackenbach, 1978). This was found for the adult male group only. Data from only one group was found to support the relationship between relaxation and lucidity and that was the student women. Consequently it must be concluded regarding these two hypotheses that there is minimal support for each. Finally, contrary to expectation, low intelligence (B) and extraversion (Q₁) were found to be related to lucid dreaming among males (students only).

In summary, psychological well-being was noted as being associated with lucid dreaming frequency for females while it was not so associated for males. Perhaps the finding of lucidity associated with religious problems might explain these confusing results. It may be that in men it is the religious "seeker", that man who is questioning the nature of his faith, who experiences lucidity. This interpretation would be consistent with the eastern interpretation of the importance of dream lucidity as a significant step along the religious path (Chang, 1977).

REFERENCES

- Belicki, A. A., & Hunt, H. (1978). An exploratory study comparing self-reported lucid and non-lucid dreamers. Poster presentation at the annual meeting of the Association for the Psychophysiological Study of Sleep, Stanford, CA.
- Cattell, R. B. (1957). Self analysis form. Champaign, IL: Institute for Personality and Ability Testing.

- Cattell, R. B. (1972). Manual for the 16PF. Champaign, IL: Institute for Personality and Ability Testing.
- Cattell, R. (1973). Personality and mood by questionnaire. San Francisco: Jossey-Bass.
- Chang, G. C. C. (1977). Teachings of Tibetan yoga. Secaucus, NJ: The Citadell press.
- Corriere, R., & Hart, J. (1977). The dream makers. New York: Funk & Wagnals.
- Dement, W. (1975). Report IV (B): Comments to report IV. In G. C. Lairy & P. Salzarile (Eds.), The experimental study of human sleep: methodological problems. Amsterdam: Elsevier.
- Evans, F. J. (1977). Hypnosis and sleep: The control of altered states of awareness. In W. E. Edmonston (Ed.), Conceptual and investigative approaches to hypnosis and hypnotic phenomena (Vol. 296). New York: Annual of the N.Y. Academy of Sciences.
- Foulkes, D. (1967). Nonrapid eye movement mentation. Experimental Neurology, 19(Suppl. 4), 28-38.
- Gackenbach, J. I. (1978). A personality and cognitive style analysis of lucid dreaming. Unpublished doctoral dissertation, Virginia Commonwealth University.
- Halliday, G. (1982). Direct alteration of a traumatic nightmare. Perceptual and Motor Skills, 54, 413-414.
- Hearne, K. M. T. (1978). Lucid dreams: An electro-physiological and psychological study. Unpublished doctoral dissertation, University of Liverpool.

- Laberge, S. P. (1980). Lucid dreaming: An exploratory study of consciousness during sleep. Unpublished doctoral dissertation, Stanford University.
- Malamud, J. R. (1980). The development of a training method for the cultivation of 'lucid' awareness in fantasy, dreams, and waking life. Unpublished doctoral dissertation, New York University.
- McCord, H. (1965). Use of a psychological pencil-and-paper test to predict hypnotizability. Journal of the American Society of Psychosomatic Dentistry and Medicine, 12, 45-46.
- Monroe, L. J. (1967). Psychological and physiological differences between good and poor sleepers. Journal of Abnormal Psychology, 72(3), 255-264.
- Mooney, R. L., & Gordon, L. V. (1950). Manual to accompany the Mooney problem check lists, forms C, H and J. New York: The Psychological Corporation.
- Reed, H. (1977). Meditation and lucid dreaming: A statistical relationship. Sundance Community Dream Journal, 2, 237-238.
- Reed, H. (1978). Improved dream recall associated with meditation. Journal of Clinical Psychology, 34(1), 150-156.
- Schacter, D. L. (1976). The hypnogogic state: A critical review of the literature. Psychological Bulletin, 83, 452-481.
- Tart, C. (1979). From spontaneous event to lucidity: A review of attempts to consciously control nocturnal dreaming. In B. B. Wolman (Ed.),